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File 347: JAPIO Nov 1976-2004/Dec (Updated 050405)  
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\*File 347: JAPIO data problems with year 2000 records are now fixed.  
Alerts have been run. See HELP NEWS 347 for details.

Set	Items	Description
S1	1824352	MRI OR MAGNETIC(1W) (IMAG? OR IMAGING) OR MAGNETIC(W) RESONA- N? OR NMR OR NUCLEAR()MAGNETIC()RESONANCE OR FTNMR OR FTMRI - OR MAGNETORESONANCE OR PMR OR PROTON(W)MAGNETIC(W) RESONAN? OR MR() (IMAGE? OR IMAGING)
S2	43347	MC=(S01-E02A2 OR S03-E07A OR S01-E02A8A OR S01-E02A1 OR S0- 3-E07C OR S05-D02B1 OR S03-C02F1) OR IC=(G01R-003 OR G01N-024- /08 OR G01V-003/A75) OR CC=(A0758 OR A8760I OR B7510N)
S3	1838699	S1:S2
S4	323074	BOREHOLE? OR BORE(W) (LOG OR LOGS OR LOGGING? OR HOLE?) OR - BORELOG? OR WELLBORE? OR WELL(W) (BORE? OR LOG OR LOGS OR LOGG- ING?) OR WELLLOG? OR DOWNHOLE? ? OR DOWN()HOLE? ?
S5	817387	LOGGING? OR DRILL??????? OR MC=(X25-E02? OR S03-C02) OR CC- =A9385
S6	955542	S4:S5
S7	81881	FORMAT?(2N) (LIQUID? ? OR FLUID? ? OR AQUA OR AQUEOUS OR AQ- UAE OR AQUAS OR H2O OR WATER???)
S8	4296	IC=(E21B-049/00 OR E21B-049/08 OR E21B-049/10)
S9	174592	(EARTH?? OR GROUND?? OR ROCK? ? OR STONE? ? OR GEOLOGIC?) (- 3N) FORM???????
S10	187716	(EARTH?? OR GROUND?? OR ROCK? ? OR STONE? ? OR GEOLOGIC? OR SUBTERRAN? OR UNDERGROUND? OR UNDER()GROUND?) (3N) FORM???????
S11	210795	(BENEATH OR UNDER OR BELOW) (3N) (EARTH? OR GROUND? OR SURFA- C?)
S12	396074	S9:S11
S13	21338	RELATIV? (2N) (PERMEABIL? OR PERMEABL?)
S14	23583	LOGGING() (WHILE OR DURING) ()DRILLING OR LWD OR LDD OR MDD
S15	199948	FLOW()MEASUR? OR MWD OR MRWD OR ((MONITOR????? OR MEASUR??- ?????? OR TEST????????? OR CHECK????? OR EXAMIN????? OR DETECT?- ????????? OR SENS?????????) (3N)DRILL???????) OR FLOWRATE OR FLOWM- ETER? ? OR MEASUR?()WHILE()DRILL?
S16	220492	S14:S15
S17	683540	(MONITOR? OR MEASUR? OR TEST? OR CHECK? OR EXAMIN? OR ANAL- YS? OR ANALYZ? OR VERIF? OR IDENTIF? OR DETECT? OR SENSE? OR - SENSING? OR INSPECT? OR ESTIMAT? OR QUANTIF? OR QUANTITAT? OR CALCULAT?) (2N)DEVICE? ?
S18	79928	POLARIZ? AGENT? ? OR ENHANS? OR HYPERPOLARIZ? OR HYPER() PO- LARIZ?
S19	81765	OVERHAUSER(2N)EFFECT OR OE OR NUCLEAR()OVERHAUSER()EFFECT - OR NOE
S20	76296	OPTICAL?(2N)PUMP?
S21	120141	CARBON()13 OR 13()C
S22	7746	S3 AND S6
S23	326	S22 AND S7
S24	88	S23 AND S9
S25	88	S24 AND S10
S26	14	S25 AND S8
S27	14	RD (unique items)
S28	74	S24 NOT S26
S29	0	S28 AND S8
S30	74	S28 AND S12
S31	0	S30 AND S13
S32	11	S30 AND S16
S33	11	RD (unique items)
S34	63	S30 NOT S32
S35	2	S34 AND S17
S36	2	RD (unique items)

S37 61 S34 NOT S35  
S38 0 S37 AND S18  
S39 0 S37 AND S19  
S40 0 S37 AND S20  
S41 1 S37 AND S21  
S42 222804 (INCREAS? OR INTENSIF? OR AMPLIF? OR ENLARG? OR EXPAND? OR  
ESCALAT? OR BOOST?) (2N) (NMR OR NUCLEAR()MAGNETIC()RESONANCE -  
OR SIGNAL? ? OR AMPLITUD?)  
S43 55077 SIGNAL? (2N)AMPLITUD?  
S44 271683 S42:S43  
S45 3 S37 AND S44  
S46 3 RD (unique items)  
S47 16308 S3 AND S44  
S48 43 S47 AND S18  
S49 1 S48 AND S19  
S50 42 S48 NOT S49  
S51 2 S50 AND S12  
S52 1 RD (unique items)  
S53 40 S50 NOT S51  
S54 7 S53 AND S20  
S55 6 RD (unique items)  
S56 33 S53 NOT S54  
S57 1 S56 AND S21  
S58 32 S56 NOT S57  
S59 0 S58 AND S16  
S60 0 S58 AND S17  
S61 0 S58 AND S16  
S62 0 S58 AND S6  
S63 11 RD S32 (unique items)  
S64 40 S19 AND S18  
S65 0 S64 AND S12  
S66 0 S64 AND S16  
S67 0 S64 AND S16  
S68 26 S64 AND S3  
S69 20 RD (unique items)  
S70 0 S69 AND S7  
S71 20 RD S69 (unique items)  
S72 420 S13 AND S16  
S73 420 S72 AND S16  
S74 0 S73 AND S18  
S75 0 S73 AND S19  
S76 0 S73 AND S20  
S77 12 S73 AND S12  
S78 12 RD (unique items)  
S79 91 S21 AND S20  
S80 1 S79 AND S19  
S81 90 S79 NOT S80  
S82 1 S81 AND S18  
S83 1875 S3 AND S18  
S84 26 S83 AND S19  
S85 0 S84 NOT S68  
S86 0 S83 AND S8  
S87 0 S83 AND S6  
S88 19 S83 AND S16  
S89 10 RD (unique items)

## Query/Command : HIS

File : PLUSPAT

## SS Results

1	28	(1) ..FAM US20040119471/PN
2	1	..CITF US20040119471/PN
3	1	..CITB US20040119471/PN
4	28	(1) ..FAM US6609568/PN
5	3	..CITF US6609568/PN
6	9	..CITB US6609568/PN
7	28	(1) ..FAM US20040055745/PN
8	1	..CITF US20040055745/PN
9	1	..CITB US20040055745/PN

Search statement 10

10/696, 996

Family  
extraction / search

## Refine Search

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### Search Results -

Term	Documents
OVERHAUSER	1253
OVERHAUSERS	0
EFFECT	3509092
EFFECTS	1358837
((OVERHAUSER ADJ EFFECT) AND 1).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	6
(L1 AND (OVERHAUSER ADJ EFFECT )).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	6

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**Database:**  US Pre-Grant Publication Full-Text Database  
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 IBM Technical Disclosure Bulletins

**Search:**

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### Search History

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**DATE:** Wednesday, April 13, 2005    [Printable Copy](#)    [Create Case](#)

**Set Name** Query  
 side by side

*DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ*

L2   L1 and (overhauser adj effect)

**Hit Count** Set Name  
 result set

6   L2

L1   (earth adj formation) and (magnetic adj resonance)

555   L1

END OF SEARCH HISTORY

## Refine Search

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### Search Results -

Term	Documents
OVERHAUSER	1253
OVERHAUSERS	0
EFFECT	3509092
EFFECTS	1358837
((OVERHAUSER ADJ EFFECT) AND 1).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	6
(L1 AND (OVERHAUSER ADJ EFFECT)).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	6

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**Search:**          

         

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Set Name Query  
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*DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ*

L2     L1 and (overhauser adj effect)

Hit Count Set Name  
result set

6     L2

L1     (earth adj formation) and (magnetic adj resonance)

555     L1

END OF SEARCH HISTORY

## Refine Search

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### Search Results -

Term	Documents
EARTH	603803
EARTHS	20496
GEOLOGICAL	15948
GEOLOGICALS	1
FORMATION	1867134
FORMATIONS	100978
(7 AND ((GEOLOGICAL OR EARTH) ADJ FORMATION)).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	8
(L7 AND ((EARTH OR GEOLOGICAL) ADJ FORMATION)).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	8

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**Database:** US Pre-Grant Publication Full-Text Database  
US Patents Full-Text Database  
US OCR Full-Text Database  
EPO Abstracts Database  
JPO Abstracts Database  
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**Search:** L8 Refine Search

Recall Text
Clear
Interrupt

### Search History

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**Set Name Query**

side by side

**Hit Count Set Name**  
result set

*DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ*

<u>L8</u>	L7 and ((earth or Geological) adj formation)	8	<u>L8</u>
<u>L7</u>	L6 and ((magnetic adj resonance) or MRI or NMR)	817	<u>L7</u>
<u>L6</u>	(overhauser adj effect)	837	<u>L6</u>
<u>L5</u>	L3 and (overhouser)	1	<u>L5</u>
<u>L4</u>	L3 and (overhouser adj effect)	1	<u>L4</u>

<u>L3</u>	((earth or geological)adj formation) and (magnetic adj resonance)	669	<u>L3</u>
<u>L2</u>	L1 and (overhauser adj effect)	6	<u>L2</u>
<u>L1</u>	(earth adj formation) and (magnetic adj resonance)	555	<u>L1</u>

END OF SEARCH HISTORY

field is being generated, irradiating said earth formation with a radio frequency radiation that is preferentially absorbed by electrons in free radicals of said hydrocarbon molecules in said weak polarizing field to enhance polarization of protons of hydrocarbon molecules within said earth formation, said irradiating field being aligned substantially normal to said weak polarizing magnetic field, (e) interrupting both said weak polarizing magnetic field and said irradiating magnetic field to initiate precession of protons polarized by said polarizing and enhancing fields, (d) and detecting signals induced by said precessing protons of said hydrocarbon molecules precessing in the earth's magnetic field. 3. A nuclear magnetism well logging method for identifying the presence of hydrocarbon molecules in an earth formation from within a well bore penetrating said earth formation comprising the steps of: 30 (a) establishing within said earth formation a weak polarizing magnetic field having at least a component thereof perpendicular to the earth's magnetic field, said polarizing field being of the order of about 5 gauss at the interface between said well bore and said earth formation (b) simultaneously establishing a radio frequency irradiation within said well bore and earth formation, said irradiation frequency being within the range of 2 to 30 megacycles, 40 (c) interrupting said polarizing magnetic field and said irradiating magnetic field to initiate precession of polarized protons in the earth's magnetic field, (d) and detecting signals induced by said precessing protons of said hydrocarbon molecules in the earth's magnetic field. References Cited by the Examiner UNITED STATES PATENTS 2,999,204 9/1961 Jones et al - ----- 324 0.5 50 3,096,476 7/1963 Poindexter et al - ----- 324-0.5 FOREIGN PATENTS 1,141, 373 3/1957 France. 1,221, 637 1/1960 France. 55 CHESTER L. JUSTUS, Primary Examiner. MAYNARD R. WILBUR, Assistant Examiner.

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Term	Documents
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EARTHS	20496
GEOLOGICAL	15948
GEOLOGICALS	1
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FORMATIONS	100978
(7 AND ((GEOLOGICAL OR EARTH) ADJ FORMATION)).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	8
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